

CLAIMS

1. A heat exchanger device (1) comprising at least one fin (2) provided with means for blowing a fluid, characterized in that the blowing means are uniform and consist of at least one of the walls (4, 5) of said fin (2), said wall (4, 5) having open porosity.
2. Heat exchanger device (1) as claimed in claim 1, characterized in that the open porosity of the wall (4, 5) is between 5 and 30% and preferably between 10 and 25% and more preferably still between 15 and 20%.
3. Heat exchanger device (1) as claimed in one of claims 1 and 2, characterized in that the fin (2) is of parallelepipedal overall shape and tubular cross section and has a permeability measured with air at a pressure of 0.5 bar and at 0°C lying in the range from 300 to 1500 Sm³/h/m², particularly lying in the range from 300 to 800 Sm³/h/m².
4. The heat exchanger device (1) as claimed in claim 3, characterized in that the permeability measured with air at a pressure of 0.5 bar and at 0°C lies in the range from 500 to 600 Sm³/h/m².
5. The heat exchanger device (1) as claimed in one of claims 1 to 4, characterized in that the blowing fluid velocity field is symmetric across the open porosity wall.
6. The heat exchanger device as claimed in one of claims 1 to 5, characterized in that at least one of the walls (4, 5) of the heat exchanger device is obtained by sintering a metal powder.
7. The heat exchanger device (1) as claimed in claim 6, characterized in that the metal powder is based on a mixture of powdered stainless steel, brass and nickel, with a particle size smaller than 100 μm and preferably with a

particle size lying within the range from 10 to 80 μm .

- 5 8. The heat exchanger device (1) as claimed in claim 7, characterized in that the open porosity is of the order of 17%.
9. The heat exchanger device (1) as claimed in one of claims 1 to 5, characterized in that at least one of the walls of the heat exchanger device is obtained by laminating a metal gauze.
- 10 10. The heat exchanger device (1) as claimed in claim 9, characterized in that the lamination comprises 3 to 18, particularly 3 to 6, layers of metal gauze.
- 15 11. The heat exchanger device (1) as claimed in any one of the preceding claims, characterized in that the fluid is air at a pressure of between 0.1 and 6 bar, preferably between 0.2 and 4 bar.
- 20 12. The heat exchanger device (1) as claimed in any one of claims 1 to 10, characterized in that the blowing fluid results from the vaporization within the fin (2) of a fluid that was initially in the liquid state.
- 25 13. The heat exchanger device (1) as claimed in any one of the preceding claims, characterized in that the heat exchanger device is provided with an auxiliary cooling circuit.